STATE OF WASHINGTON

DEPARTMENT OF FISH & WILDLIFE

LANDS AND RESTORATION SERVICES PROGRAM

Salmonid Screening, Habitat Enhancement &
Restoration Division (SSHEAR)

OFF-CHANNEL SITE INVENTORY DATA

General Information:

Region: North Coast

Observer(s): King

River System: Bogachiel

Date: 6/98

Site Identifier: B-L6-02

WRIA: 20.

River Mile Location: 18.3 (Stream catalog)

RB/LB: LB

Local Name: Rayonier Channel

Trib. to: Bogachiel R.(20.0162)

Legal Description: SW¼ Sec 1 T27N R13W

County: Jefferson

Habitat Type: Groundwater Channel

Landowner: () Federal () State () County () Other Government (X) Private
- Rayonier

Directions to site:
Turn east onto Dowans Ck. Road at mile post 184 on Hwy 101. Follow this road for approximately one mile to a pullout on the left with large boulders on the edge. Park here and walk across B-L6-01 and follow the old road out to the channel.

Site Overview:
B-L6-02 was created by the S.S.H.E.A.R. program within WDFW. An abandoned river channel was deepened to below the groundwater level and log and plank controls were installed to set the gradient. The upper end of the channel was enlarged to form a pond. Refuge bays and undercut banks were created in the channel and woody debris was loaded into the entire length of the channel. The bare soils were seeded and mulched and willow cuttings as well as other shrubs and trees were planted along the channel edges.

Habitat Information:

Water source: Groundwater primarily with some spring action from the left bank side.

Intermittent/year-around:
- Year-around

Estimated flows (cfs): ½ cfs at mouth.

Water temperatures: 8.5° C on 12/15/98

Adjacent stream temperature (20.0162): Not taken

Other water observations: Water initially had a gray claylike cast to it but it cleared soon after construction ceased.

Site area measurements: () Indirect () Direct (X) Combination
Widths: Channel- 3.0 m - 12.0 m
Depths: Channel- 15 cm - 120cm
Total length: 370 m

Total existing habitat area (est.): 1900m²
Spawning area: 300 m²
Other rearing area: 1600 m²

Spawning Habitat conditions: () None () Poor () Fair (X Good () Excellent

Describe spawning habitat:
- The spawning gravel was imported and placed upstream from each log control.

Rearing habitat conditions: () None () Poor () Fair (X) Good () Excellent

Describe pond and other rearing habitat:
- This channel was designed primarily for winter rearing habitat for juvenile coho and trout. Heavy amounts of woody debris were loaded into the entire length of the channel.

Describe unaccessible habitat:
None at this time.

Describe wetland: () Bog () Marsh () Scrub-shrub Wetland () Forested Wetland

Flooding potential: (X) Low () Medium () High
- The lower 300 foot section is subject to backwatering during high flows in the Bogachiel.

Fish Information:

Site entry condition to (Bogachiel R.): () Poor () Fair (X) Good
- The stream has an open egress.

Coho access and use:
Juvenile- () Unknown () None () Poor () Fair (X) Good
Adult- () Unknown () None () Poor (X) Fair () Good
- Abundant juvenile coho moved upstream into this channel in the fall of 1998. (See subsequent minnow trap report.
- No adults were observed in the fall of 1998.

Other species access and use: () Chum () Pink () Sockeye () Chinook (X) Trout
- Trout were not observed in the minnow traps with the coho, but there is no reason they should not use the channel.

Habitat Improvements:

Enhancement opportunities:
- More vegetation needs to be added to the open areas.

Other Comments:

GPS: (decimal degrees, Datum WGS84): 12/23/02
upper project - N47.81718, W124.16909
egress - N47.87401, W124.32279

Attachments Available:

Contact respective SSHEAR habitat biologist for the following checked items:

(X) Aerials	(X) Sketch	(X) Maps	() Culvert Report
() Other references	() Spawning surveys	(X) Juvenile trapping	() Fishway Report

DATE: 12-16-98 **OBSERVER:** Darrow

MINNOW TRAPPING REPORT

TRAP	DATE SET	TEMP	DATE PULLED	TEMP	COHO	CATCH TROUT			COTTID
						RBT	CUTT	0+	
1	12/15	8.5°C	12/16	8.5°C	33	0	0	0	1
2	12/15	8.5°C	12/16	8.5°C	18	0	0	0	1
3	12/15	8.5°C	12/16	8.5°C	25	0	0	0	0
4	12/15	8.5°C	12/16	8.5°C	11	0	0	0	2
5	12/15	8.5°C	12/16	8.5°C	18	0	0	0	2
6	12/15	8.5°C	12/16	8.5°C	24	0	0	0	0
7	12/15	8.5°C	12/16	8.5°C	1	0	0	0	0
8	12/15	8.5°C	12/16	8.5°C	33	0	0	0	0
9	12/15	8.5°C	12/16	8.5°C	30	0	0	0	0
10	12/15	8.5°C	12/16	8.5°C	7	0	0	0	6
11	12/15	8.5°C	12/16	8.5°C	32	0	0	0	4
12	12/15	8.5°C	12/16	8.5°C	18	0	0	0	13
13	12/15	8.5°C	12/16	8.5°C	14	0	0	0	6
14	12/15	8.5°C	12/16	8.5°C	12	0	0	0	9
15	12/15	8.5°C	12/16	8.5°C	29	0	0	0	4
				TOTALS:	305	0	0	0	48

COMMENTS:

-Trap 1 was placed furthest upstream portion of the project - upper end portion of the pond.
-Trap 2 was placed on the right bank, upper end of pond.
-Trap 3 was placed downstream of trap 2, on the right bank of the pond.
-Trap 4 was placed on the left bank, upper end of pond.
-Trap 5 was placed downstream of trap 4, on the left bank of the pond.
-Trap 6 was placed downstream of trap 5, on the left bank of the pond.
-Trap 7 was placed ~ 6 m upstream of the upper control - at the pond outlet.
-Trap 8 was placed in the first downstream, left bank bead pool.
-Trap 9 was placed ~ 2 m downstream of second downstream control.
-Trap 10 was placed in the second downstream, left bank bead pool.
-Trap 11 was placed downstream of trap 10 in a right bank bead pool.
-Trap 12 was placed downstream of trap 11, ~ 11 m downstream of the forth downstream control.
-Trap 13 was placed ~13 m downstream of the fifth downstream control.
-Trap 14 was placed ~15 m downstream of the sixth downstream control.
-Trap 15 was placed downstream of the seventh downstream control, ~ 22 m upstream of the confluence.

RAYONIER CHANNEL - COHO FORK LENGTHS (mm) 12/99									
Trap 1	90	92	66	87	67	107	75	78	102
	87	83	65	85	95	78	94	90	75
	82	77	93	84	98	77	72	76	91
	93	74	91	95	85	80			
Trap 2	90	95	83	98	72	97	82	77	99
	90	110	96	80	94	83	97	71	79
Trap 3	106	82	79	82	89	98	80	95	100
	85	81	85	72	80	87	88	95	98
	82	102	79	95	100	76	89		
Trap 4	70	90	102	76	77	70	91	66	80
	84	93							
Trap 5	88	86	84	85	84	104	78	67	83
	102	77	98	95	96	99	78	86	113
Trap 6	91	101	94	71	91	74	85	73	84

RAYONIER CHANNEL - COHO FORK LENGTHS (mm) 12/99									
	77	95	81	94	76	91	101	91	71
	106	87	92	96	75	87			
Trap 7	95								
Trap 8	93	83	89	107	89	84	91	102	95
	86	82	82	90	84	86	75	90	96
	86	95	96	93	83	95	105	99	95
	90	92	86	91	80	94			
Trap 9	94	97	72	84	72	90	82	92	89
	92	80	95	73	89	93	87	96	86
	96	103	112	89	93	100	99	91	80
	97	90	85						
Trap 10	91	80	88	80	107	108	92		
Trap 11	87	83	102	79	127	86	110	83	86
	76	101	106	95	76	98	78	83	85
	89	84	80	80	92	80	90	94	97
	101	88	100	100	70				
Trap 12	64	86	79	83	94	63	90	95	89
	82	92	89	94	85	89	79	77	95
Trap 13	84	92	90	88	71	89	91	88	86
	78	86	97	83	80				
Trap 14	87	106	77	92	73	88	68	79	90
	85	95	83						
Trap 15	76	95	98	68	94	96	70	96	67
	72	92	60	72	96	79	77	71	62
	91	81	65	93	86	85	72	90	83
	94	89							
AVG	**87.21**	**STD**	**10.34**	**MIN**	**60**	**MAX**	**127**	**COUNT**	**305**

MINNOW TRAPPING REPORT

TRAP	DATE SET	TEMP	DATE PULLED	TEMP	COHO	CATCH TROUT RBT	CUTT	0+	COTTID
1	5/2	11.5°C	5/3	11.5°C	11	0	0	0	8
2	5/2	11.5°C	5/3	11.5°C	8	0	0	0	1
3	5/2	11.5°C	5/3	11.5°C	0	0	0	0	8
4	5/2	11.5°C	5/3	11.5°C	0	0	0	0	22
5	5/2	11.5°C	5/3	11.5°C	0	0	0	0	23
6	5/2	12°C	5/3	12°C	10	1	0	0	2
7	5/2	12°C	5/3	12°C	5	0	0	0	19
8	5/2	12°C	5/3	12°C	6	0	0	0	15
9	5/2	12°C	5/3	12°C	3	0	0	0	1
10	5/2	12°C	5/3	12°C	8	2	0	0	0
				TOTALS:	51	3	0	0	99

COMMENTS:
-Trap 1 was placed on the right bank, in upper pond (mid section).
-Trap 2 was placed on the right bank, in upper pond (upper section).

DOC: B-L6-02

-Trap 3 was placed on the left bank, in upper pond (mid section).
-Trap 4 was placed on the left bank, in upper pond (lower section).
-Trap 5 was placed downstream of trap 4, below upper notch control.
-Trap 6 was placed downstream of trap 5, below following downstream control.
-Trap 7 was placed downstream of trap 6, in a left bank bead pool.
-Trap 8 was placed downstream of trap 7, in a right bank bead pool.
-Trap 9 was placed downstream of trap 8, against lower left bank side log.
-Trap 10 was placed downstream of trap 9, in the lower end of the channel.

RAYONIER CHANNEL - COHO FORK LENGTHS (mm) 5/99									
Trap 1	104	112	110	95	101	97	124	105	103
	116	101							
Trap 2	73	93	95	94	87	100	103	97	
Trap 6	104	98	95	114	83	106	93	79	104
	109								
Trap 7	104	105	95	101	97				
Trap 8	95	106	105	95	90	97			
Trap 9	105	97	98						
Trap 10	105	83	88	100	91	95	89	92	
AVG	**98.6**	**STD**	**9.3**	**MIN**	**73**	**MAX**	**124**	**COUNT**	**51**

DATE: 5/2/99 **OBSERVER:** Darrow

No problems encountered other than a log control near the egress has ~ 12 inch drop. This will be fixed this coming summer. Large amount of silt at the egress can be attributed to a hill slope failure upstream - the lowest controls were buried. Filamentous algae is thick in some areas. Observed fry in the lower end of the channel.

DATE: 10/16/99 **OBSERVER:** Darrow/Pichahchy

Upstream and downstream trap was installed. At that time (10/16/99), the outflow was non-existent. The flow became intermittent for the next three weeks following installation. Fish arrived soon after installation and are now moving in daily. The seeded banks took root over the summer and the clover has drawn the attention of several elk and deer. The small trees and wooded debris at the mouth had a limited life-span due to all the backwater flooding. Silt deposition is building.

DATE: 11/16/99 **OBSERVER:** Nettnin

A tote of excess salmon carcasses from the Sol Duc Hatchery was distributed throughout the project (utilizing Honor Camp Crew).

DATE: 4/2/00 **OBSERVER:** Darrow

This site is presently being trapped for migrants. The out migrating smolts have been large and robust. This site also has numerous cottids. The trap does backwater during large events. The system looks good. The channel has good cover of aquatic vegetation and algae. Grass and clover are growing well along the channel banks. Also, alder and willow saplings are sprouting.

DATE: 10/10/00 **OBSERVER:** Darrow

A ditch was dug, connecting the roadside wetland flow into the upper portion of the project. This will help limit access to the wetland by fish which will reduce stranding. DNR Honor Camp crew helped rearrange rocks at ditch outflow to prevent fish from moving into it from the project. Honor Camp also assisted in setting up the trap, and distributing 2 totes of spring chinook from the Sol Duc hatchery. Project egress has accumulated some silt. Vegetation (grass, willows, ect) are well established and area is frequented by deer and elk.

DATE: 3/10/01 **OBSERVER:** Darrow

Lower than normal precipitation this winter and early spring. Everything has held up fine but some modification of rock spill at ditch egress still needs to be done. The additional flow from the upper wetland area has helped but it also will cause the channel flow to fluctuate quickly during a rain event. This is partially due to the road runoff that influences the wetland area.

DATE: 7/25/01 **OBSERVER:** Nettnin

Installed two control weirs in the interconnecting channel. Planted ferns and other vegetation in disturbed areas.

DATE: 9/26/01 **OBSERVER:** Darrow

Juvenile migratory trap was installed for another trapping season. Some backwater siltation has accumulated at the egress but has not affected channel outflow. Alder and willow have reached the growth stage where it is increasing in size and density dramatically.

DATE: 1/20/02 **OBSERVER:** Darrow

MINNOW TRAPPING REPORT

TRAP	DATE SET	TEMP	DATE PULLED	TEMP	CATCH COHO	TROUT RBT	TROUT CUTT	TROUT 0+	COTTID
1	1/19	6.5°C	1/20	6.5°C	0	0	0	0	0
2	1/19	6.5°C	1/20	6.5°C	0	0	0	0	0
3	1/19	6.5°C	1/20	6.5°C	1	0	1	0	0
4	1/19	6.5°C	1/20	6.5°C	0	0	0	0	0
				TOTALS:	1	0	1	0	0

COMMENTS:
Traps were placed in parallel wetland, upstream of plank control that acts as a spillway.
-Traps 1 and 2 were placed in the 1st pool upstream of control.
-Traps 3 and 4 were placed in the 2nd pool upstream of control.

DATE: 3/27/02 **OBSERVER:** Darrow

Salmon carcasses were placed in this channel twice during the fall. Some mortality of juveniles were observed during that period. Still uncertain if the coho carcasses were affecting the juveniles (ie cold temperature disease). During rainy periods, the influx from the road runoff and adjacent wetland causes the channel flow to increase dramatically. Also, the channel can become murky during those high flow periods. We had some coho spawners downstream and upstream of the trap box. There were approximately eight redds.

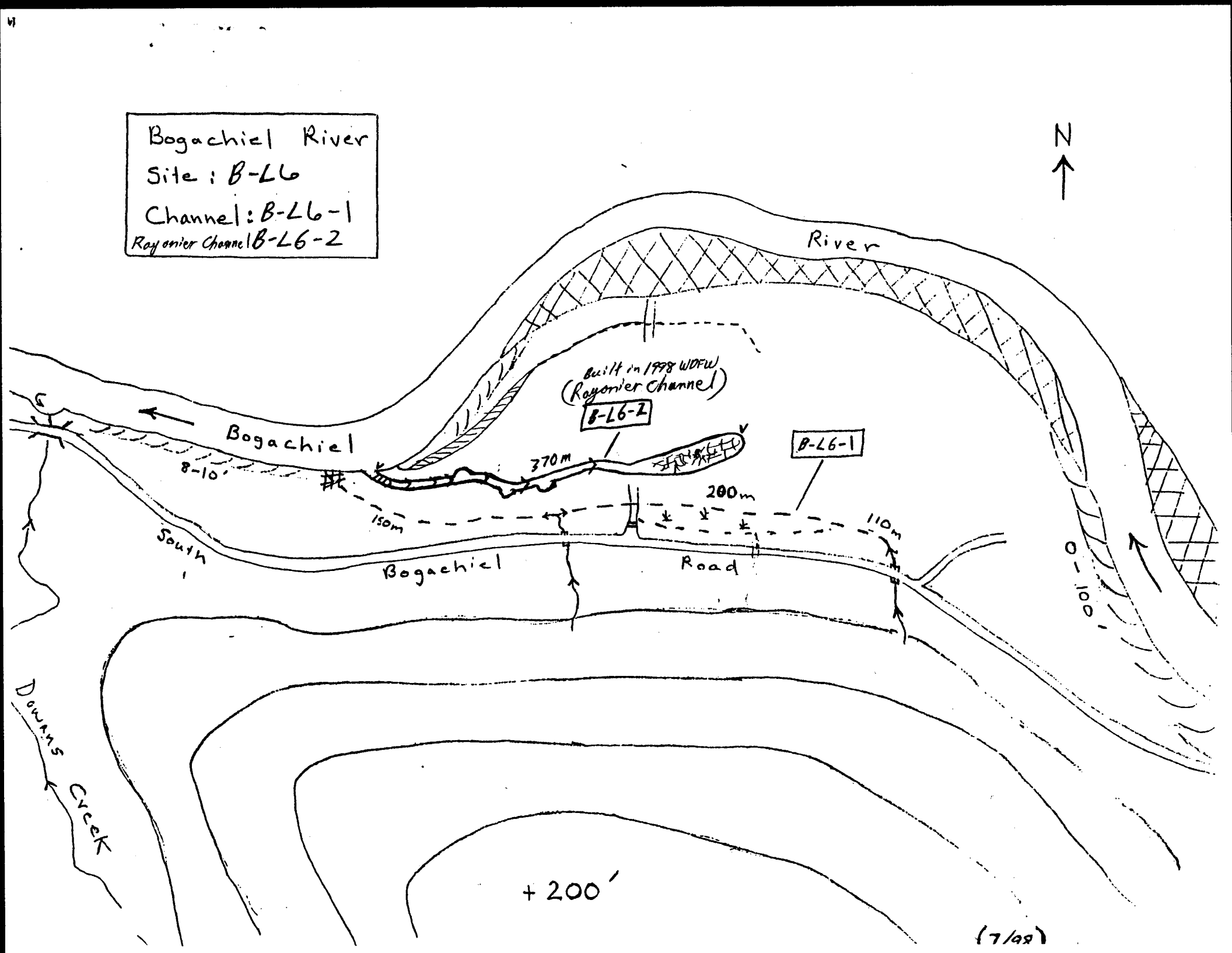
DATE: 12/23/02 **OBSERVER:** Powell

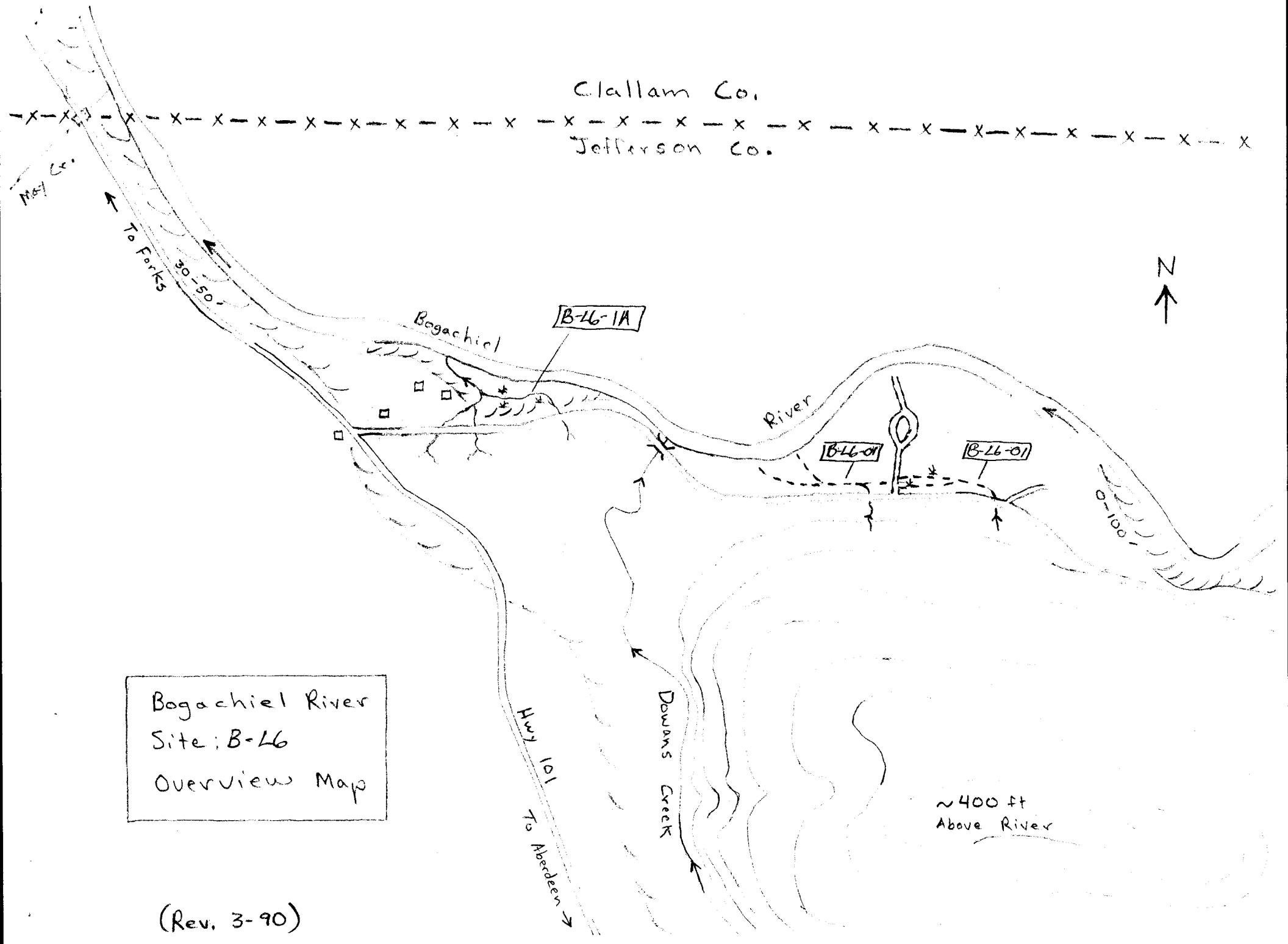
Been checking this site on occasion this fall for spawners. To date, one redd has been observed upstream of the old trap site. Project looks okay. Did pull grass out of the channel in the lower end at an earlier date.

GPS: (decimal degrees, Datum WGS84):
upper project - N47.81718, W124.16909
egress - N47.87401, W124.32279

DATE: 4/25/03 **OBSERVER:** King
Looks good overall. Fry were observed in the channel, and smolt size fish were seen in the pond.

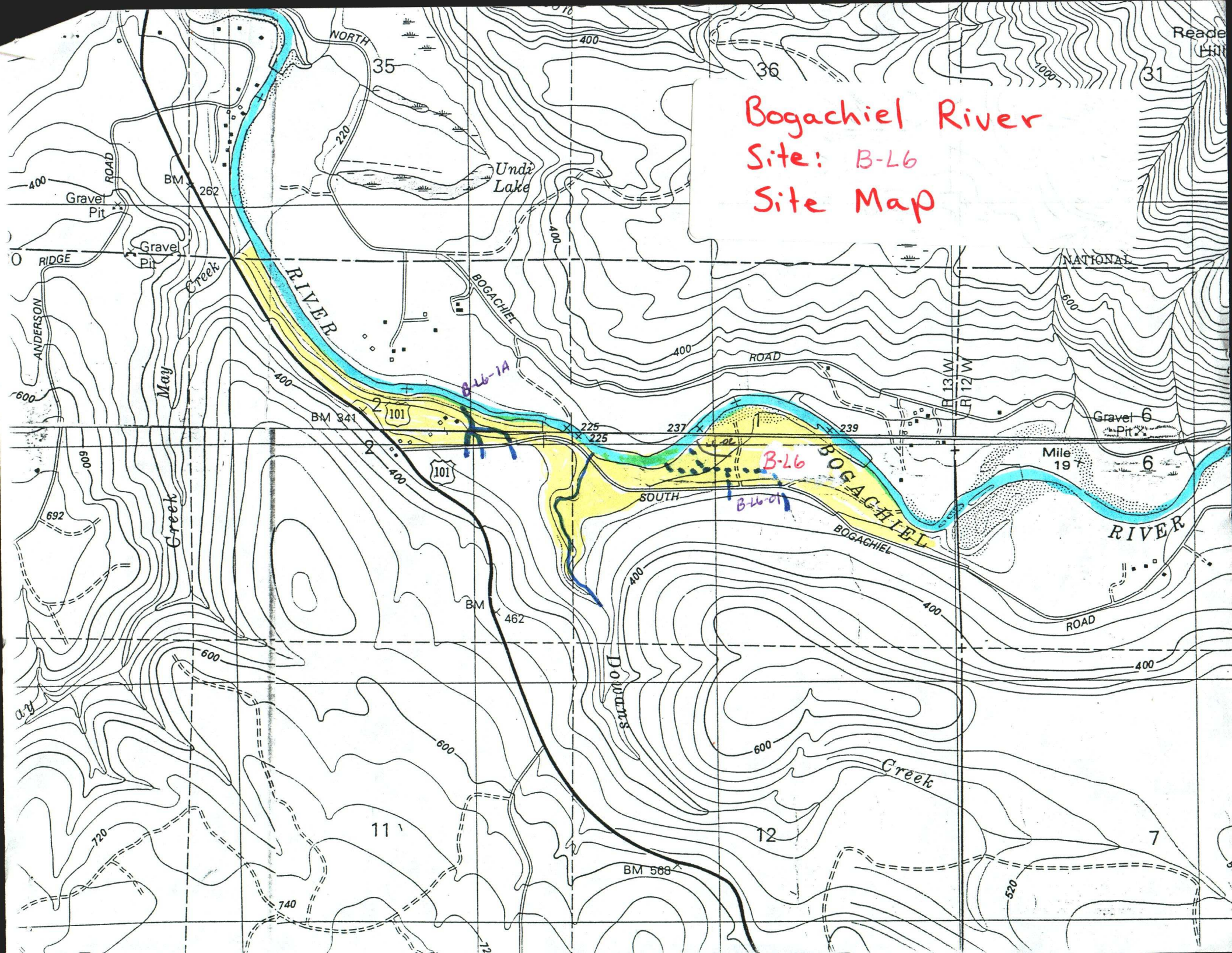
DATE: 10/24/03 **OBSERVER:** King
Looks good. Some beaver debris on two controls. No problem so far.


Bogachiel River
Site : B-L6
Channel : B-L6-1
Rayonier Channel B-L6-2
N
River
Built in 1998 WDFW
(Rayonier Channel)
B-L6-2
B-L6-1
Bogachiel
8-10'
370m
200m
150m
110m
South
Bogachiel
Road
0-100'
Downs Creek
+200'
(7/98)



Bogachiel River
Site: B-L6
Overview Map

(Rev. 3-90)


Bogachiel River
Site: B-L6
Site Map
NORTH
SOUTH
BOGACHIEL
RIVER
ROAD
Undi Lake
Gravel Pit
Gravel Pit
Gravel Pit
RIDGE
ANDERSON
May Creek
Creek
Dooms
Creek
BM 262
BM 341
BM 462
BM 568
B-L6-1A
B-L6
B-L6-01
101
R 13 W
R 12 W
Mile 197
NATIONAL
35
36
31
6
2
1
11
12
7